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ABSTRACT

The rehabilitation of existing on-site wastewater treatment facilities is often the best approach to meeting waste disposal needs. Upon completing the learning session described in this instructor's guide, participants should understand the technology and treatment methods for low-volume wastewater flows. These materials are part of the Working for Clean Water Project, which is intended to provide technical information in lay language to citizen groups interested in water quality planning. (Author/WB)

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Working for Clean Water

An Information Program for Advisory Groups

Small Systems

Instructor Guide

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Small Systems

Twenty-nine percent of the United States population is not sewered. A distinct trend away from onsite treatment is occurring, sometimes at great expense to the public. The rehabilitation or modification of onsite treatment often represents the most cost-effective system. Where a central treatment system is needed, alternative methods of collection such as pressure or vacuum sewers should be considered.

Upon completion of this session the participant should be able to:

- Understand the need for less expensive alternatives for small wastewater treatment systems
- Recognize alternative technologies for treatment of small wastewater flows
- Describe in general terms the various small flow treatment methods
- Explain to their agency and persons they represent why onsite treatment alternatives should be evaluated.

Required Materials

- ☐ Set of slides plus cassette tape for the audiovisual presentation, "Onsite Wastewater Treatment Systems"
- ☐ Slide projector, cassette tape player, and screen
- ☐ Set of transparencies plus overhead projector and/or flip charts plus easel for guided discussion
- ☐ Copy of handbook, "Small Systems," for each participant
- ☐ Copy of the Onsite Disposal Questionnaire and the handout entitled Sewage Treatment Options for Community Problems for each participant. (Copies of these materials are in the Appendix.)

Important Notes

1. A field trip would be very informative. It should include observation of a failed system, a properly working system, and at least one test pit to evaluate soil profiles.
2. The local sewage enforcement officer should attend the presentation to answer questions about local onsite disposal.
3. The advisory group may be organized into small teams, each with responsibility for getting answers to a few of the questions on the Onsite Disposal Questionnaire. Although this approach has learning benefits, it requires cooperation and time that the participants may be unable to give. The instructor should locate as much information as possible concerning the items in the questionnaire ahead of the meeting. The consultant and grantee can also provide help. The questionnaire should be adapted to include local information sources.

Suggested Activities

Introductory Comments	5 minutes
A/V Presentation	15 minutes
Guided Discussion	25 minutes
Closing Remarks	5 minutes

TOTAL TIME 50 minutes

Introductory Comments (5 minutes)

1. Ask the participants if any of them have onsite disposal systems.

- Is their system functioning correctly?
- When was the last time the tank was pumped out?

2. Ask if anyone knows how much it costs to install an onsite system.

- The cost will vary, but the average is \$2,000.
- Tell them that some central treatment facilities for small communities have cost as much as \$10,000 per household, possibly five times that of onsite systems. Of that \$10,000, perhaps \$7,000 was for the collection system!

A/V Presentation (15 minutes)

1. Briefly review the objectives of the slide/tape presentation. It is an overview of treatment of small flows. Points covered include:

- Alternative technology may qualify for 85% federal cost-sharing.
- Onsite options include septic tanks, aerobic treatment tanks, soil absorption beds, mound systems, sand filters, disinfection, recycle systems, and waterless toilets.
- Central treatment collection options include small diameter gravity, small diameter pressure, and vacuum sewers.

A/V script is in the Appendix.

2. Ask participants to note on paper the various onsite disposal systems and collection systems shown in the slide/tape program that may be useful in their locality.

3. Show the slide/tape program entitled "Onsite Wastewater Treatment Systems."

Guided Discussion (25 minutes)

See citizen handbook for list of methods.

1. Using either a chalkboard or flip chart set up two lists. One should be titled Methods of Onsite Treatment. The other should be titled Methods of Sewage Collection. Ask the participants for suggestions to compile the lists. Add any methods the participants have missed.

A copy of the questionnaire is in the Appendix.

2. Give each participant a copy of the Onsite Disposal Questionnaire. Go over the sources of information for the questions. The participants should begin answering and discussing questions immediately so that the questions are understood. The questionnaire should be completed by the next meeting, when the information can be analyzed and discussed further.

Closing Remarks (5 minutes)

A copy of the handout is in the Appendix.

1. Hand out copies of "Sewage Treatment Options for Community Problems." Discuss the options.*
2. Address any remaining questions from the participants.
3. Summarize the topics discussed during the meeting.

* The EPA publication, Small Wastewater Systems: Alternative Systems for Small Communities and Rural Areas (FRD-10), can also be used in the discussion. See Selected Resources.

Selected Resources

Alternatives for Small Wastewater Treatment Systems. Volume 1, 2 and 3. EPA Technology Transfer Seminar Publication. Cincinnati, OH: EPA Technology Transfer, October 1977. 90 pp., 98 pp., 31 pp.

This three volume publication is an excellent reference for agency personnel, consultants, grantees, and the citizen adviser who want to expand their knowledge of small wastewater treatment systems alternatives. There are a few introductory paragraphs on each topic with additional details useful in decision-making. Volume 1 deals with onsite disposal and septage treatment and disposal. Volume 2 deals with pressure and vacuum sewers. Volume 3 covers cost-effectiveness analysis including five case histories. This document is available as Order No. 45238 from U.S. EPA Environmental Research Information Center, Technology Transfer, 26 West St. Claire Street, Cincinnati, OH 45268.

Frome, M. Rural Sewage Treatment in Vermont. Books 1 and 2. Montpelier, VT: Agency on Environmental Conservation, July 1978. 139 pp., 90 pp.

Book 1, "A Guide to the Alternatives?" is a comprehensive review of sewage treatment, Vermont sewage treatment law, conventional septic systems, alternative onsite systems, waterless toilets, and water conservation devices. Book 2, "A Planning Manual" presents a planning perspective in a series of questions and statements. Answers to the questions indicate if you have a problem with onsite disposal and the statements help to solve the problem. It is available from the Vermont 208 Water Quality Program, Agency of Environmental Conservation, Montpelier, VT 05602.

Innovative and Alternative Technology Assessment Manual: Draft, MCD-53, EPA 430/9-78-009. Washington, DC: U.S. Environmental Protection Agency, Office of Water Program Operations, 1978. 383 pp.

This comprehensive manual on innovative and alternative technology includes 117 unit process fact sheets. These fact sheets include onsite disposal methods, small diameter pressure and vacuum sewers, and septage treatment. The methodology by which small treatment systems may be considered for additional funding is also reviewed. This report is available through the General Services Administration, Centralized Mailing List Services, Building 41, Denver Federal Center, Denver, CO 80225.

Onsite Treatment. Cincinnati, OH: U.S. Environmental Protection Agency, Office of Research and Development, July 1979. 72 pp.

This publication describes in detail various forms of onsite treatment/disposal options. Included are soil absorption and recycle systems, filtration and disinfection techniques, nutrient removal, waste segregation, and flow reduction devices. Applicability, operation and maintenance requirements, environmental concerns, and costs are included for each option. This publication is available through the U.S. Environmental Protection Agency, Office of Research and Development, Cincinnati, OH 45268.

Onsite Wastewater Disposal Alternatives — Federal, State and Local Involvement. EPA-440/3-77-020. Washington, DC. U.S. Environmental Protection Agency, Office of Water Planning and Standards, 1978.

This publication is a case study of the Southern Kennebec Valley Regional Planning Commission of Maine. It is available as Order No. 4805 from the U.S. Environmental Protection Agency, Library Services, Maildrop 35, Research Triangle Park, NC 27711.

Planning Wastewater Management Facilities for Small Communities. Cincinnati, OH: U.S. Environmental Protection Agency, July 1979. 141 pp.

This manual presents information and techniques for recognizing and evaluating wastewater management problems frequently faced by small communities and for planning the range of facilities which will solve those problems, giving due consideration to costs, community characteristics, and growth management. It is designed to aid engineers and the communities they serve in operating and evaluating various options for disposing of their wastewater. This publication is available through the U.S. Environmental Protection Agency, Office of Research and Development, Cincinnati, OH 45268.

Small Wastewater Systems: Alternative Systems for Small Communities and Rural Areas (FRD-10). Washington, DC. U.S. Environmental Protection Agency, Office of Water Program Operations, January 1980.

This foldout brochure presents a wide array of onsite and small community wastewater systems. Using simple graphics and plain English, the foldout describes how these systems operate and how they can be used to solve a community's

wastewater problems. The publication is available through the General Services Administration, Centralized Mailing List Services, Building 41, Denver Federal Center, Denver, CO 80225. Use FRD-10 identification number when ordering.

Appendix

A. Handouts for the instructor to give to the participants for use in promoting discussion and action.

1. Onsite Disposal Questionnaire

2. Sewage Treatment Options for Community Problems

B. Script for slide/tape program, "Onsite Wastewater Treatment Systems."

ONSITE DISPOSAL QUESTIONNAIRE

NOTE: Sources of information to help answer the questions are in parentheses.

1. Are there any present onsite problems in the community? (local health officer, local sewage enforcement officer, local planning commission, state environmental resources department)

2. How bad are the problems? (local health officer, local sewage enforcement officer, state environmental resources department)
 - a. number of failing sites? single or widespread
 - b. type of failures? surfacing, groundwater contamination, odors
 - c. is sewage entering surface waters?
 - d. is groundwater pollution a problem? (also check with U.S. Geological Survey)
 - e. have these failures been verified by someone knowledgeable or are they hearsay?
 - f. what is the cause of the problem?

3. Can the failed systems be repaired, upgraded or must they be replaced? (local sewage enforcement officer, consultant)

4. How can the onsite treatment facilities be managed to insure good and lasting performance? (local sewage enforcement officer, state environmental resources department)

Is septage treatment adequate?

Can a permit system promote adequate management?

5. Can onsite treatment meet the needs for the future development? (consultant)

Are soils adequate? (Soil Conservation Service)

Are lot sizes large enough? (local sewage enforcement officer)

Which areas? (zoning board, planning commission)

6. Will a water conservation program help? How can a water conservation program be instituted for users of onsite disposal? (local government officials, state environmental resources department)

7. Are the ordinances adequate to regulate onsite disposal? If not, what additions or changes are needed? (state environmental resources department, local government officials, local sewage enforcement officers)

8. What are the environmental advantages and disadvantages of onsite disposal?
(consultant, Soil Conservation Service, state environmental resource department,
planning commission, special interest groups, and the Army Corps of Engineers and
U.S. Department of the Interior in parts of the nation)

SEWAGE TREATMENT OPTIONS FOR COMMUNITY PROBLEMS*

Treatment Option	Where It Can Work
1. Conventional septic systems	Where soils and site conditions are adequate
2. Septic systems with oversize fields and beds Septic systems with dosing systems Septic systems with alternative fields for individual building	Where soils or sites have minor problems
3. Septic systems with evapotranspiration beds	Where soils or sites have severe limitations but rainfall is low enough to permit function
4. Aerobic tank systems for individual buildings Mound systems for individual buildings	Where soils or sites have limitations for treating wastewater
5. Sand filtration, polishing, disinfection	Where sites have severe limitations and surface water discharge is allowed
6. Water conservation measures <u>plus</u> septic systems for individual buildings Waterless toilets plus septic systems for grey water for individual buildings Onsite recycle systems	Where the site can absorb only a limited amount of water
7. Cluster septic system, each one serving a small group of buildings	Where individual septic systems will not work, but there is a good site for a shared septic system
8. Community subsurface system(s) serving all buildings with sewage problems	Where there is a good site that can absorb the total sewage load
9. Centralized sewage treatment plant for the entire community with either gravity sewers, pressure sewers, or vacuum sewers	Where subsurface systems will not work because soils are too limited, population density is too great, or extra capacity for future growth is desired

*Adapted from Rural Sewage Treatment in Vermont prepared by M. Frome for Vermont 208 Water Quality Program, Montpelier, VT 05602

A/V Script:

ONSITE WASTEWATER TREATMENT SYSTEMS

Slide Description	Narrative
1. Words: Onsite Wastewater Treatment Systems	Music
2. Drawing: Outhouse	The treatment and disposal of human wastes has not always been accomplished in the manner to which most of us have become accustomed.
3. Picture: Water Carriage Toilet	The familiar flush toilet is a standard household fixture and contributes greatly to comfortable living,
4. Picture: Sewage Treatment Plant	but increasing population and the resulting increased wastewater flows have over-loaded some wastewater treatment facilities,
5. Picture: Outfall of Polluted Water	causing the release of improperly treated wastewater into streams, lakes, and groundwater supplies.
6. Picture: U.S. Capitol	Acknowledging this fact, Congress amended the Federal Water Pollution Control Act in 1972, and again in 1977, to clean up the nation's waters
7. Picture: Man Fishing	and make them fishable and swimmable again by 1983.
8. Words: I&A Technologies	The 1977 legislation, called the Clean Water Act of 1977, emphasized the need to consider innovative and alternative technologies for wastewater treatment. It authorized an increase in the Federal share of a project, funded through the Environmental Protection Agency's Construction Grants Program, from 75 to 85% for innovative and alternative projects.
9. Drawing: Pie With 2% Set-aside	States are required to set aside 2% of their Construction Grants allocation to fund the 10% increase in grants for innovative and alternative projects.
10. Drawing: Pie With 4% Set-aside	The Clean Water Act of 1977 also requires States with rural populations of 25% or more to set-aside 4% of their Construction Grants allocation for small communities.

11. Drawing: Money Bags, 75% and 10%

For innovative and alternative projects in small communities, 75% of the Construction Grant comes from a 4% set-aside and 10% comes from the 2% set-aside.

12. Words: Onsite Systems

An important alternative technology for small communities is the onsite system.

13. Words: Onsite System Must be Publicly or Privately Owned

An onsite system may be publicly or privately owned and may serve single or multiple family residences or small commercial enterprises.

14. Picture: Isolated Single Family Residence

Privately owned onsite systems are called individual systems. They also are eligible for federal funding from EPA's Construction Grants Program under certain conditions. A public body must request the grant and assume responsibility for proper installation, operation, and maintenance of the system.

15. Drawing: Uncle Sam With A Bag Marked 85%, City Council With Bag Marked 15%

Let us review onsite wastewater treatment systems that may qualify for the 85% Federal cost share as provided in the 1977 Clean Water Act.

16. Drawing: Typical Layout of a Septic Tank and Soil Absorption System

A septic tank and soil absorption system is an economical and environmentally acceptable wastewater treatment system under favorable soil and groundwater conditions.

17. Drawing: Septic Tank Cutaway

The septic tank contains no moving parts. Solids in the wastewater are separated from the liquid and treated in the septic tank.

18. Picture: Pumping a Septic Tank

Continual effective wastewater treatment by a septic tank is dependent on the periodic removal of solids from the tank. Pumping is generally required every two or four years.

19. Drawing: Aerobic Treatment and Soil Absorption System

Aerobic treatment of wastewater is another onsite system.

20. Drawing: Aerobic Treatment with Air Pump

Treatment includes the active addition of air into the system to encourage aerobic bacterial growth.

21. Drawing: Soil Absorption System
- Further treatment and disposal of the effluent from a septic tank or aerobic unit can be accomplished by several methods. The most widely used method is a soil absorption system.
22. Picture: Soil Absorption System Under Construction
- Trouble-free operation of a soil absorption system depends largely on proper sizing of the system, good construction, and effective pretreatment of the wastewater.
23. Words: Site Evaluation
- Climate
 - Topography
 - Soil Type
- A complete site evaluation, including an examination of climate, topography, and soil type, is necessary to properly design a soil absorption system.
24. Picture: Making a Percolation Test
- One important step in site evaluation is to make a percolation test. Holes are dug at the site and repeatedly filled with water so a measurement can be made of how fast water seeps into the saturated soil.
25. Drawing: Typical Level System
- Lateral lines of a soil absorption system must be installed level in order to function properly.
26. Drawing: Typical Slope System
- On a sloping site, the laterals follow the contour of the ground at different levels.
27. Drawing: Cross Section of a Sloping Soil Absorption System
- A "drop box" is used at each level to allow one lateral to be flooded before the liquid flows to the next level.
28. Words: Modifications Are Possible to Improve Performance
- Several modifications in the soil absorption system are possible to improve its performance or increase its life span. Careful selection of a system to match the site conditions is of paramount importance for long-term, trouble-free operation.
29. Drawing: Alternative Soil Absorption Systems
- One modification involves the use of two separate soil absorption systems. One system receives the liquid while the other lies dormant. The cycle is reversed every six months to a year to allow one system to be restored while the other is being used.
30. Drawing: Dosing System
- Another modification includes low-pressure dosing. This requires the use of a pump or siphon to periodically flood the entire system. Liquid is stored in a holding tank until it is distributed to the soil absorption system.

- | | |
|---|---|
| 31. Drawing: Typical Layout of a Septic Tank with Mound Disposal System | A mound system is another modification that may improve the treatment of wastewater. |
| 32. Drawing: Cross Section of a Mound Disposal System | A mound increases the effective depth of soil available to receive the wastewater. |
| 33. Map: Areas Suitable for Evaporation Techniques | In areas of low rainfall and high evaporation rates, onsite wastewater systems may incorporate <u>evaporation</u> as a means of effluent disposal. |
| 34. Picture: Evaporation Lagoon System | The simplest of these systems is an evaporation lagoon where evaporation from the surface is the principal means of liquid disposal. |
| 35. Picture: Evapotranspiration/Absorption System | An alternative to the evaporation lagoon is an evapotranspiration/absorption system. |
| 36. Drawing: Cross Section of Evapotranspiration/Absorption System | The basin that normally would serve as a lagoon is filled with sand and covered with vegetation. Liquid enters at the bottom of the basin and percolates into the soil and up through the sand to where it is evaporated or used by growing plants. |
| 37. Drawing: Cross Section of Evapotranspiration System With Liner | To protect groundwater supplies, absorption from the system may be prevented by installing an impervious liner in the basin to form an evapotranspiration system. |
| 38. Words: Sand Filtration | When conditions prohibit the use of soil absorption systems or modifications of those systems, sand filtration may be used to further treat septic tank or aerobic unit liquids. |
| 39. Drawing: House, Septic Tank and Sand Filter With Discharge | After filtration, the treated water is disposed of in an acceptable manner. It may require further treatment or it may be suitable for discharge. There are three basic types of sand filters. |
| 40. Drawing: Buried Sand Filter | The buried sand filter consists of a distribution system for the liquid superimposed over a layer of sand and a collection system in the bottom to remove the filtered water. |

41. Drawing: Recirculating Sand Filter
A recirculating sand filter has, in addition to a sand filter, a recirculation tank through which the liquid is recycled and finally discharged.
42. Drawing: Intermittent Sand Filter
An intermittent sand filter is composed of two identical units. One unit receives liquid from the septic tank while the other is allowed to dry out.
43. Words: Excessive Nutrients in Wastewater May Cause a Problem
The liquid released from onsite systems must not pollute surface waters or groundwater. Excessive nutrients such as nitrogen and phosphorus are most likely to cause a problem.
44. Drawing: Housewife Shopping for Groceries
A number of nutrient removal devices are adaptable to onsite treatment systems. In-house wastewater management through segregation of wastes and household product selection is a practical nutrient control technique.
45. Drawing: Continuous Flow Nitrogen Removal
When in-house management of wastewater is not a practical solution, other devices are available to remove nutrients depending on the nature of the problem.
46. Words: Disinfection
• Chlorination
• Iodination
• Ultraviolet light
Disinfection of the liquid from onsite systems may be required prior to the discharge. Three types of disinfection commonly used are chlorination, iodination, and ultraviolet light.
47. Drawing: Stack Feed
Chlorination can be accomplished by causing the wastewater to flow by exposed chlorine tablets, or by adding a chlorine solution to the wastewater.
48. Drawing: Iodine Saturator
Disinfection with iodine is accomplished by treating the wastewater with a measured amount of solution from an iodine saturator.
49. Drawing: High Intensity Ultraviolet Lamp
Disinfection with ultraviolet light is accomplished by passing the wastewater through the rays of an ultraviolet lamp.
50. Picture: Houses on a Lake
Sometimes houses and even small communities are located in such a manner that suitable space is not immediately available on which to install an onsite treatment system, while not too far away,

51. Picture: Pastorial Scene
there may be abundant space with favorable site characteristics for disposal of the wastewater.
52. Picture: PVC Pipe
Under these conditions it may be desirable to install small-diameter, pressure, vacuum or gravity sewers to carry the wastewater to a convenient location for treatment and disposal.
53. Drawing: Pressure or Vacuum Sewer
Pressure or vacuum sewers require energy for operation, but their suitability for hilly terrain or areas with shallow groundwater may make them more economical than gravity sewers.
54. Picture: Pressure Sewer Being Installed
Since both pressure and vacuum sewers must be sealed to function properly, no infiltration of ground- or rainwater can occur. This usually results in less wastewater to be treated.
55. Drawing: Pressure Sewer System
One type of pressure sewer hookup includes a septic tank and holding tank with a pump that pumps wastewater from the holding tank into a small diameter sewer.
56. Drawing: Typical Grinder Pump Installation
When using a small diameter pressure sewer without a septic tank, a grinder pump must be used to reduce the size of the solids in the wastewater.
57. Drawing: Vacuum Sewer System
A typical vacuum sewer system also uses small diameter pipe. It moves household wastes by suction through a series of transport pockets to a holding tank, from which they are pumped to the treatment facility.
58. Drawing: Small Diameter Gravity Sewer Installation
Small diameter gravity sewers may be used if the topography is favorable and septic tanks are used to remove the solids.
59. Words: Onsite Systems for Blackwater
• Non-water Carriage Toilets
• Recycling Toilets
Onsite systems that treat only blackwater — wastes from the toilet and from the kitchen — may also be used. They include non-water carriage toilets and recycling toilets.
60. Drawing: Composting Toilet
Non-water carriage toilets include composting toilets, incinerating toilets, and oil recycle toilets. Residuals that result from the use of these toilets must be disposed of periodically.

61. Drawing: Chemical Recirculating Toilet

Recycling toilets use very little water. Wastewater must be treated and disinfected before it can be recycled to flush the toilet. Residuals from these toilets must also be disposed of periodically.

62. Drawing: Onsite Systems for Graywater

Whenever a separate system is used to treat blackwater, another system has to be provided to treat the graywater, which is water from the bath and from the laundry. Graywater can be treated in a septic tank and soil absorption system or in other onsite systems discussed in this presentation.

63. Picture: MCD 53 Manual

EPA Publication MCD-53 is a good reference for anyone planning onsite wastewater disposal. A copy may be obtained by writing the Office of Water Program Operations (WH-547), U.S. Environmental Protection Agency, Washington, DC 20460.

64. Words: In Summary

In summary, onsite treatment systems include technologies for treating and disposing of wastewater from individual homes, small communities, commercial enterprises and other establishments not served by central sewage collection facilities.

65. Drawing: Money Bags, 85% Federal Share and 15% Local Share

Federal construction grants of up to 85% of the initial or capital costs are available for onsite systems. A privately owned system may be eligible for a federal grant if it is installed under the auspices of an eligible public body, and the public body assumes responsibility for its proper operation.

66. Drawing: A Question of Economics

An onsite system must be cost-effective before it can be funded through EPA's Construction Grants Program. That is, it represents an economical solution to the problem without overriding environmental concerns and implementation considerations.

67. Words: Consult Local Health Officials

Rules and regulations pertaining to onsite systems vary from place to place. Always consult with local health officials before installing an onsite treatment system.

68. Drawing: U.S. Environmental
Protection Agency

This presentation was prepared under the
direction of the Office of Water Program
Operations of the U.S. Environmental
Protection Agency in Washington, DC.

69. Credit Slide

Music.

Working for Clean Water is a program designed to help advisory groups improve decision making in water quality planning. It aims at helping people focus on essential issues and questions, by providing trained instructors and materials suitable for persons with non-technical backgrounds. These materials include a citizen handbook on important principles and considerations about topics in water quality planning, an audiovisual presentation, and instructor guide for elaborating points, providing additional information, and engaging in problem-solving exercises.

This program consists of 18 informational units on various aspects of water quality planning:

- Role of Advisory Groups
- Public Participation
- Nonpoint Source Pollution: Agriculture, Forestry, and Mining
- Urban Stormwater Runoff
- Groundwater Contamination
- Facility Planning in the Construction Grants Program
- Municipal Wastewater Processes: Overview
- Municipal Wastewater Processes: Details
- Small Systems
- Innovative and Alternative Technologies
- Industrial Pretreatment
- Land Treatment
- Groundwater Contamination
- Multiple Use
- Environmental Assessment
- Cost-Effectiveness Analysis
- Wastewater Facilities Operation and Maintenance
- Financial Management

The units are not designed to make technical experts out of citizens and local officials. Each unit contains essential facts, key questions, advice on how to deal with the issues, and clearly-written technical backgrounds. In short, each unit provides the information that citizen advisors need to better fulfill their role.

This program is available through public participation coordinators at the regional offices of the United States Environmental Protection Agency.